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EXAMINER	
SWARTZ, RODNEY P	

ART UNIT	PAPER NUMBER
1645	

NOTIFICATION DATE	DELIVERY MODE
06/08/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/559,663	FENSTERLE ET AL.	
	Examiner	Art Unit	
	Rodney P. Swartz, Ph.D.	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 17-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 17-28* is/are rejected.

7)☒ Claim(s) *1,4,8,12,22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/06,6/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' Preliminary Amendment, received 5 December 2005, is acknowledged. Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, and 18 have been amended. Claim 16 has been cancelled. New claims 19-28 have been added.

2. Claims 1-15 and 17-28 are pending and under consideration.

Priority Statement

3. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. There is no priority statement at the beginning of the specification claiming benefit of the prior documents.

Drawings

4. The following is a recitation of 37 C.F.R. §1.74, Reference to Drawings:

> When there are drawings, there shall be a brief description of the several views of the drawings, and the detailed description of the invention shall refer to the different views by specifying the numbers of the figures, and to the different parts by use of reference letters or numerals (preferably the latter).

The specification does not contain a section entitled, "Brief Description of Drawings".

Specification

5. The disclosure is objected to because of the following informalities:

Page 2, line 20, what is "TFG-β"?

Page 5, line 34, "samonellae" should be "salmonellae".

Page 8, lines 1-2 are unclear, e.g., what is meant by "in at least one chromosome of these bacteria at least one gene"; line 18, the reference citation of Simon and Chopin is incomplete; line 22, the reference citation for Loessner et al, is incomplete; line 24, the reference citation for Dietrich et al, is incomplete.

Page 9, line 23, "Salmonealla" should be "Salmonella".

Page 11, line 21, "10^9" should be "10^9"; line 37, what is meant by "Provision of"?

Page 12, line 2, "abut" should be "about"; line 13, "1x10^5" should be "$1x10^5$"; line 19, there is a listing of step vi), but no explanation; line 30, "10^6" should be "10^6"; line 31, "10^7" should be "10^7".

Page 13, lines 1 and 15, "10^4" should be "10^4"; lines 2, 8, and 18, "10^5" should be "10^5"; line 39, "fig.1" should be "Fig. 1"; line 39, what is the "relevant" table being referred to?

Page 14, line17, "fig. 2 and fig. 3" should be "Fig. 2 and Fig. 3"; what is the "relevant" tables referred to?; line 20, "fig. 3" should be "Fig. 3"; lines 22, 38, and 39, "10^5" should be "10^5"; line 25, what is meant by "Provision of"; line 39, "10^4" should be "10^4".

Page 15, line 1, "10^5" should be "10^5"; line 8, "10^4" should be "10^4"; lines 32-33, "fig. 4" should be "Fig. 4" and what is the "relevant" table being referred to?

Page 17, line 13, "typhimiuium" should be "typhimurium".

Page 18, lines 4 and 10, what is meant by "gray" listeriae?

Appropriate correction is required.

Drawings

6. Figure 2 is objected to because "10^3" should be "10^3".

7. Figure 3 is objected to because "10^5" should be "10^5".

8. Figure 4 is objected to because it is unclear what is meant by "gray" listeriae.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

9. Claim 1 is objected to because of the following informalities: line 4, "dentritic" should be "dendritic". Appropriate correction is required.

10. Claim 4 is objected to because of the following informalities: line 4, "intracellailare" should be "intracellulare", "kansasil" should be "kansasii". Appropriate correction is required.

11. Claim 8 is objected to because of the following informalities: there is no comma following "fusion proteins" in the listed Markush group. Appropriate correction is required.

12. Claim 12 is objected to because of the following informalities: line 2, "dentritic" should be "dendritic". Appropriate correction is required.

13. Claim 22 is objected to because of the following informalities: line 1, "imunospuppressant" should be "immunosuppressant". Appropriate correction is required.

Claim Rejections - 35 USC § 101

14. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 1, 3, 4, 7, 8, and 19-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are drawn to mammalian cells comprising a bacterium and various components. There is no recitation of isolation/purification. Therefore, the claims read on a product of nature which occurs in mammalian infections with various bacterium.

Claim Rejections - 35 USC § 112

16. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

17. Claims 9-15 and 17-18 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for macrophages and tumor cells infected with *S.*

typhimurium or *L. monocytogenes* injected into mice, does not reasonably provide enablement for methods of treatment of disorders. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Enablement requires that the specification teach those in the art to make and use the invention without undue experimentation. Factors to be considered in determining whether a disclosure would require undue experimentation include (1) the nature of the invention, (2) the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims.

The nature of the invention – methods for prophylaxis or therapy of any/all disorders comprising administration of a mammalian cell which is loaded with a bacteria.

The state of the prior art as evidenced by the documents provided by applicants, e.g., Banchereau et al (2001), indicate that there are many concerns about the efficacy of the claimed methods which can only be answered by actual examples. For example, Banchereau et al state that there is a lack of predictability in the art concerning the dosages, means of introducing the loaded macrophages, repeated immunizations, and targeting of the cells to the required areas.

The amount of direction/guidance/examples present in the instant specification is insufficient support for the extremely broad scope of the instant claims, i.e., methods for prophylaxis or therapy of any/all disorders. The only working examples are macrophages and

tumor cells infected with *S. typhimurium* or *L. monocytogenes* injected into mice, but no actual examples of the claimed methods for prophylaxis or therapy of any/all disorders.

Therefore, the breadth of the claims constitute merely an invitation to experiment without a reasonable expectation of success.

18. Claims 1-15 and 17-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the mammalian cell which is loaded with a bacteria is "autologous, allogeneic or xenogeneic". It is unclear what is meant by this because there is no recitation of what the cell is to be "autologous, allogeneic or xenogeneic" with. Claims 2-15 and 17-28 depend from claim 1, but do not clarify the matter.

19. Claims 5-15 and 17-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are drawn to "an active substance", but neither the specification nor the claims define the term. For example, what is the scope of the "activity" of the substance?

20. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is drawn to an active substance that is "associated" with a membrane of a bacteria. It is unclear what are the metes and bounds of this "association".

21. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, because the claim recites the limitation "claim 1, wherein the active substance" in line 2. There is insufficient antecedent basis for this limitation in the claim because claim 1 does not recite "active substance".

22. Claims 9-15 and 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is drawn to a method for the prophylaxis or therapy of a "disorder" comprising administration of an "active substance or vaccine antigen" which blocks elements in "a tumor tissue". It is unclear what "disorders" are being encompassed by this claim and how it relates to "a tumor tissue". Claims 10-15 and 17-18 depend from claim 9, but do not clarify the issue.

23. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, because the claim recites the limitation "claim 1... wherein the active substance and/or vaccine antigen" in line 4. There is insufficient antecedent basis for this limitation in the claim because claim 1 does not recite "active substance" or "vaccine antigen".

24. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 depends from claim 9 which depends from claim 1. Claim 1 is drawn to a cell loaded with a bacteria wherein said cell may be a dentritic cell or a macrophage.

Claim 12 now recites that the active substance/vaccine antigen is loaded "ex vivo onto dentritic cells or onto macrophages". It is unclear if these cells are the same cells as in claim 1 which are loaded with bacteria, or if the cells of claim 12 are other "dentritic cells or macrophages".

25. Claims 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are drawn to a cell loaded with a bacteria comprising a "foreign" DNA. It is unclear what the DNA is foreign to. For example, is the DNA foreign to the host mammalian cell, the bacteria, or the subject receiving the mammalian cell construct?

Conclusion

26. No claims are allowed.

27. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rodney P. Swartz, Ph.D., Art Unit 1645, whose telephone number is (571) 272-0865. The examiner can normally be reached on Monday through Thursday from 9:00 AM to 7:30 PM EST.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Jeffrey Siew, can be reached on (571)272-0787.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RODNEY P SWARTZ, PH.D
PRIMARY EXAMINER
Art Unit 1645

June 4, 2007